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Demand Management Policies, External Debt and Growth Nexus in SAARC Countries

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ABSTRACT

This study has focused on external debt and growth relations along with demand management policies in SAARC countries. Panel data have been collected for a sample time from 1990 to 2019. The ARDL is found suitable after getting mixed results from panel unit root tests. According to the results, external debt is retarding the process of economic growth in SAARC economies. Even when the relationship is explored in the scenario of demand management policies, it is still negative. But multilateral foreign debt is accelerating growth. The nonlinear relationship between external debt and growth is also examined via the Laffer curve. Some policy implications are driven such as the economies may explore and extend internal resources instead of relying on external debt. However, in case of dire needs multilateral external debt may be preferred. Moreover, demand management policies can play a vital role in this respect.

1. Introduction

Demand management policies along with the volume of foreign loans affect the GDP growth rate. Foreign debt has become a necessary evil, for developing countries and developed ones. Demand management policies can accelerate economic growth by selecting the optimal size of external debt and its righteous utilization. Even they can hold back economic growth by securing the worst volume and misuse of external debt. Many empirical studies have been conducted to investigate the reasons for external borrowing from different countries. The countries seek debt from external sources due to several reasons like low income, budget deficit, or insufficient investment level. The countries do not possess enough resources for financing their projects. Furthermore, a very low rate of saving is one of the main reasons in less developed countries. Thus, no other option is left except external borrowing. To tackle all these problems, external debt is inevitable as it is preferred to print currency notes and impose a tax (Adgebite et al., 2008).

It is quite conflicting to decide whether external debt enhances economic growth or holds it back. The empirical studies have mixed findings concerning the debt growth nexus as these have established increasing, decreasing, and non-significant links between foreign loans and GDP growth rate in the context of the diverse situation. SAARC countries like other developing economies must rely on

foreign sources to design their development projects and overcome the budget deficit, to bridge the gap between saving and investment. Our study aims to explore whether external debt enhances or discourages the GDP growth rate in SAARC countries and which type of role is played by demand management policies in this respect. Several developing countries, such as SAARC economies, have amassed significant amounts of foreign debt that they are unable to service. There is growing concern that massive quantities of foreign debt are harming growth, and that a significant portion of these debts is unpaid. The foreign debt of SAARC countries is unsustainable (Sheikh et al., 2014). That is why instead of investing these debts to enhance growth, a large portion is spent merely to meet servicing obligations. Many studies concluded that in the case of developing countries, the factor behind the poor performance was foreign debt. Debt Overhang theory argued the same adverse impact of foreign debt on growth. The theory explains if economies accumulate too much foreign debt, to meet servicing obligations they must impose taxes. The high tax rate will decrease investment and the process of growth will be held back. Schclarek and Romon-Ballester (2005), Ayadi and Ayadi (2008), Adgebite et al. (2008), and Malik et al. (2010) concluded the same negative effect of foreign debt on growth.

Demand management policies perform a prominent role in external debt and the process of growth. These policies, if designed carefully not only reduce the dependence on foreign debt but also convert its adverse impacts into favorable ones. At the same time, poorly designed policies cause the burden of external debt to exceed the sustainable level and thus slow down growth. Although external debt and growth nexus have been a debatable topic for many researchers (especially in some countries that have been the focus just like Nigeria which was studied again and again by many researchers in different periods) yet only a few studies are found in the context of SAARC countries. Even then, these studies focused on external debt and growth nexus only. We concentrated on demand management policies, external debt, and economic growth at the same time. These three variables, to the best of our knowledge, have never been focused on earlier in the context of SAARC countries. Moreover, we are analyzing external debt as a stock variable and as a flow variable, and even multilateral external debt (due to its less conditionality) is included in the models to know which one has positive impacts on economic growth and thus, must be preferred. In this way, we are claiming that such type of work has never been done before.

Thus, the focus of our study is:

- To investigate the relationship explaining external debt and economic growth.
- To explore the role of demand management policies along with external debt on economic growth.
- To probe the non-linearity of external debt in the form of the debt Laffer curve.

2. Literature Review

2.1 Studies on External Debt and Economic Growth

This section deals with empirical studies on foreign debt and growth nexus. Akduğan and Yıldız (2020) observed five fragile economies to explore foreign borrowing and the growth nexus in these economies. The GDP reacted positively in response to the shock in stock of overseas loans in these economies. In the case of India and Indonesia, the relationship was not statistically significant. Awan and Qasim (2020) estimated the effects of foreign debt on phenomena of growth in the context of Pakistan. According to the results, foreign debt had adverse effects on the process of growth. Hameed and Quddus (2020) initiated a study on SAARC countries to seek the link between their economic performance and increasing public debt. The findings confirmed that in the short as well as in long term, public debt harmed the growth of SAARC countries. Govdeli (2019) initiated an empirical study that tested the association between foreign loans and GDP in Turkey. Some important results pointed out that though the stock of foreign debt encouraged GDP in the short as well as in long term, even

then due to the impact of some other variables the positive effects would no longer exist. Matandre and Tito (2018) sought the impact of the foreign loan on Zimbabwe's GDP. The results discovered a significant effect of foreign loans that Zimbabwe's process of growth was adversely related to it. Ciftcioglu and Sokhanwar (2018) explored the link between foreign loans and GDP in the context of 12 developing countries of Central and Eastern Europe. It was proved that in eight economies GDP was inversely correlated with foreign loans. Ullah et al. (2017) initiated a study to observe the bond between foreign loans and the GDP of Pakistan. The findings of the paper provided evidence that Pakistan's economic performance was inversely related to foreign loans. Siddique et al. (2017) described foreign debt and GDP relations in Pakistan. The study concluded that the GDP growth of Pakistan was significantly and inversely related to foreign debt. Ndubuisi (2017) analyzed the effects of foreign borrowing on the process of growth of the Nigerian economy. The results declared that foreign borrowing had a significant positive impact on the economic growth of the Nigerian economy. Burhanudin et al. (2017) sought the impact of Malaysia's public debt on her process of growth. The results approved that the economic growth of Malaysia was an increasing function of public loans. Akram (2017) verified the major consequences of reducing public debt for economic growth in Sri Lanka. The study found a positive relationship between foreign debt and economic growth in Sri Lanka. Siddique et al. (2016) used HIPCs data to analyze the degree to which the burden of foreign borrowing influenced growth in these countries. It was proved that there existed a negative relationship between foreign debt and the process of growth. Ada et al. (2016) explored how the economic growth of Nigeria was affected by foreign debt. According to the result GDP growth was significantly and negatively influenced by foreign loans. Adamu and Rasiah (2016) explored the vigorous role of foreign loans in GDP growth in the context of the Nigerian economy. The study explained the negative correlation between the variables in Nigeria. Mahmoud (2015) analyzed the role played by foreign debt in the growth process of Mauritania. The result explained that in the case of Mauritania's economy foreign borrowing had adverse impacts on growth. Korkmaz (2015) tested the association of foreign loans and GDP growth in the context of Turkey. External debt impacted positively the Turkish economy. Soydan and Bedir (2015) provided fresh evidence for an already existing debate about external loans and the economic growth nexus. The results confirmed that there existed an optimum level of external debt which was supportive of economic growth. Ntshakala (2015) initiated a study to seek the impact of public borrowing on economic growth in Africa's small country Swaziland. The result revealed that the level of external debt in Swaziland was too little to play any role in economic growth. Egbe and Alfred (2015) initiated a study to explore the effects overseas loans had on economic growth in Nigeria. Weak causality was found between foreign loans and the process of growth in Nigeria. Thus, foreign borrowing could not be used for the prediction of trends in GDP. Zaman and Arsalan (2014) focused on the major role played by foreign debt in process of economic growth in the context of Pakistan's developing economy. It was depicted by the findings that throughout the period considered by the study, foreign debt had been accelerating the growth process in Pakistan. Zouhaier and Fatma (2014) investigated the impacts of borrowing on the process of growth in the context of nineteen developing economies. The findings shed light on the fact that foreign debt had a significant negative impact on the economic growth of these developing countries. Sheikh et al. (2014) analyzed external debt sustainability across SAARC economies. The results showed that exceeding external debt slowed down economic growth in SAARC countries and delayed the process of development in these countries.

2.2 Studies on Demand Management Policies, External Debt, and Economic Growth

Now, we are going to review studies on foreign debt and growth nexus along with demand management policies. Dey and Tareque (2020) investigated the importance of macroeconomic policies in foreign debt and growth nexus. The authors found that stable macroeconomic policies, not only minimized the negative impact of foreign debt on the economic growth of Bangladesh but also accelerated growth. Behrouz et al. (2017) considered foreign debt and growth along with macroeconomic policies in the context of Iran. It was shown by the results that though growth was

negatively influenced by foreign debt yet this impact could be decreased and even could be turned into a positive effect by launching stable macroeconomic policies. Ramzan and Ahmad (2014) explored the link between foreign debt and Pakistan's economic growth along with macroeconomic policies. Presbitero (2008) reassessed if the relation between foreign loans and GDP was influenced by the policies and institutional factors in the context of a panel of 114 poor and middle-income economies. The findings approved that the link between foreign loans and GDP was at a time influenced by both factors institutions and policies. Hsing (2003) explored the impact of macroeconomic policies and foreign debt on the economic growth of the Brazilian economy. The study concluded that depreciated rate of exchange caused the gross domestic product to rise in the short run while foreign debt was negatively related to that policy of depreciation.

3. Model Specifications

Now we describe three models which explicates the role of foreign debt in economic growth. To evaluate the debt-growth nexus, debt variables are encapsulated in the standard growth model. The empirical specification of the debt-growth model is based Elbadawi et al. 1997; Pattillo et al. 2002, 2004; Hansen, 2004 and Ramzan and Ahmad, 2014.

Model 1: External debt and Growth Model

GDPG =f (LFPR, GFCF, SSE, ED, DS, INF, TAX, TRADE) (1)

$$GDPG_{it} = \beta_o + \beta_1 LFPR_{it} + \beta_2 GFCF_{it} + \beta_3 SSE_{it} + \beta_4 ED_{it} + \beta_5 DS_{it} + \beta_6 INF_{it} + \beta_7 TAX_{it} + \beta_8 TRADE_{it} + \mu_{it} \quad (2)$$

Model 2: Demand Management Policies, External Debt, and Growth Model

GDPG = f (LFPR, GFCF, SSE, ED, DS*P, MD) (3)

$$GDPG_{it} = \beta_o + \beta_1 LFPR_{it} + \beta_2 GFCF_{it} + \beta_3 SSE_{it} + \beta_4 ED_{it} + \beta_5 DS * P_{it} + \beta_{it} MD + \mu_{it} \quad (4)$$

Model 3 External Debt Laffer Curve: Non-Linear Model

GDPG = f (LFPR, GFCFG, SSE, ED, ED², MD, INF, TAX, TRADE) (5)

$$GDPG_{it} = \beta_o + \beta_1 LFPR_{it} + \beta_2 GFCF_{it} + \beta_3 SSE_{it} + \beta_4 ED_{it} + \beta_5 ED^2_{it} + \beta_6 MD_{it} + \beta_7 INF_{it} + \beta_8 TAX_{it} + \beta_9 TRADE_{it} + \mu_{it} \quad (6)$$

Where:

GDPG=GDP Growth rate (% Annual)

LFPR= Labor Force Participation Rate (% of total population ages 15+)

GFCF= Gross Fixed Capital Formation (% of GDP)

SSE = Secondary School Enrolment (Gross%)

ED = External Debt Stock (% of GNI)

MD = Multilateral External Debt (% of total external debt)

DS = Interest Payments on External Debt (% of GNI)

TAX = Tax Revenue (% of GDP)

INF = Inflation (GDP deflator (annual %)

ED² = Square of External Debt Stock (% of GNI)

TRADE = Trade (% of GDP)

4. Data: Definition and Sources

GDP Growth rate (% Annual)

The GDP rate of growth analyses the average % change in an economy's total production of finished goods and services from one year to another. It can be calculated via this formula

GDP Growth rate = GDP2 – GDP1/GDP1 x 100

Data for GDPG are collected from World Development Indicators.

Labor Force Participation rate (% Annual) (% of total population ages 15+)

The sum of the people unemployed and employed is termed as labor force whereas the labor force participation rate tells % participation of the working-age population. The internationally recognized age threshold for the working-age population is 15+. However, it can also be country-specific. The formula to calculate LFPR is as follows

LFPR (%) = Labor force \ Working-age population x 100

The data are extracted from World Development Indicators.

Gross Fixed Capital Formation (% of GDP)

GFCF includes capital invested in infrastructures such as the construction of roads, dams, flyovers, bridges, railways, power stations, and construction of hospitals, colleges, and offices, and capital invested in improving the quality of land, etc.

SSE = Secondary School Enrolment (Gross%)

Total Pupils regardless of their age enrolled at secondary level education as % of the total pupil of secondary school-going age are called secondary school enrollment. SSE can be calculated with this formula

SSE = Total pupils regardless of their age enrolled at secondary level education /Total pupil of secondary school-going age x 100

Data of SSE are obtained from World Development Indicators.

ED = External Debt Stock (% of GNI)

The total stock of debt availed by public or private debtors from foreign sources is called external debt stock. As a percentage of GNI, it can be calculated as follows

External Debt Stock = External Debt Stock/GNI x 100

The data are availed from IDS.

Tax = Tax Revenue (% of GDP)

Revenue that is collected by the government, by imposing different types of tax is called tax revenue. An involuntary and compulsory fee, paid by individuals and corporations to finance the state's spending is called a tax. Tax revenue as % of GDP indicates how much revenue is being collected in an economy via tax as compared to its size. Data for tax are extracted from WDI.

TAX= Tax Revenue /GDP x 100

MD = Multilateral External Debt (% of total external debt)

A part of foreign debt whose creditors are international donor agencies or financial institutions is called multilateral debt. Data for multilateral external debt is got from IDS. It can be measured as

MD = Multilateral External Debt/ total external debt) x 100

DS = Interest Payments on External Debt (% of GNI)

Servicing costs that a lander economy must pay to the donor sources are referred to as interest payments on external debt. Data of this variable are availed from IDS. It is calculated as

DS = Interest Payments on External Debt/. GNI x 100

INF = Inflation (GDP deflator (annual %)

Inflation is a situation in which overall price levels tend to rise. Its data is collected from World Development Indicator. The calculation is made by this formula

INF = Nominal GDP/Real GDP x 100

TRADE = Trade Revenue (% of GDP)

The aggregate of services and goods exported and imported as a percentage of GDP is known as trade. Data for this variable are got from WDI. Trade is measured by the formula

TRADE = Total value of imports and exports in a particular year/ GDP for a particular year x 100

5. Econometric Methodology: Panel ARDL

The possibility of an equilibrium relationship between two or more time-series variables in the long run that is non-stationary individually at their level is referred to as cointegration (Gujarati, 2008). The concept underlying cointegration analysis is that over time, the trend of macroeconomic indicators can up or down, and even groupings of variables may follow the same or different trends. As a result, they drift together and a long-term relationship is formed.

Pesaran et al. (2001) developed Autoregressive Distributive Lags Model which is a technique for cointegration. Two models distributed lag and autoregressive are merged in this single model. Components of Short-run, as well as long-run models, can be measured by using only one equation through the ARDL technique. ARDL cointegration yields an estimate that is both efficient and unbiased. This eliminates the issues that endogeneity and serial correlation might cause (Pesaran et al., 2001). The ARDL technique for cointegration, according to Narayan and Narayan (2007), is also valid for small samples, but the Engel & Granger (1987) and Johansen (1990) approaches do not provide reliable results in such cases. As Pesaran and Shin (1999) show, the performance of the ARDL technique to cointegration is better when samples are small than the Johansen approach, which normally provides valid results only for a high sample size.

It is the most essential feature of the ARDL method that it accepts that variables can be integrated in a different order. Stationarity I(0), non-stationarity I(1) of the variables, and even a combination of the two can be integrated. Because the ability of the conventional unit root test to determine the order of integration of variables is minimal, this fact makes traditional cointegration strategies unstable. The ARDL technique to cointegration, on the other hand, demands that the predictand be I(1) and that exogenous variables not be integrated to a higher order than one.

There are two steps to the ARDL method. In the first stage, to establish the significance of the lagged levels of the variables in the unconstrained error correction model, the long-run relationship between variables is tested utilizing the F-statistic. The estimation of the long-run coefficients is calculated in the second step. Ours is a small sample. Some of the variables in our study are 1(1) while others are 1(0). So, ARDL is a suitable method for the estimation of different models developed in Chapter Four.

Panel ARDL Specification

The purpose served by our study is to explore the impact of external debt interacting with demand management policies on the economic growth of SAARC countries namely Pakistan, India, Bangladesh, Bhutan, Srilanka, Maldives, and Nepal. The study focused on GDPG as explained variable whereas explanatory variables are lagged GDPG, labor force participation rate, gross fixed capital formation, secondary school inrolment, external debt, debt servicing, inflation, tax, and, trade.

$$\Delta(GDPG)_{it} = \tau_0 + \tau_1(GDPG)_{it-1} + \tau_2(LFPR)_{it-1} + \tau_3(GFCF)_{it-1} + \tau_4(SSE)_{it-1} + \tau_5(ED)_{it-1} + \tau_6(DS)_{it-1} + \tau_7(INF)_{it-1} + \tau_8(TAX)_{it-1} + \tau_9(TRADE)_{it-1} + \mu_{it} \quad \textbf{(7)}$$

$$\Delta(GDPG)_{it} = \tau_0 + \tau_1(GDPG)_{it-1} + \tau_2(LFPR)_{it-1} + \tau_3(GFCF)_{it-1} + \tau_4(SSE)_{it-1} + \tau_5(ED)_{it-1} + \tau_6(DS*P)_{it-1} + \tau_7(MD)_{it-1} + \mu_{it} \quad \textbf{(8)}$$

$$\Delta(GDPG)_{it} = \tau_0 + \tau_1(GDPG)_{it-1} + \tau_2(LFPR)_{it-1} + \tau_3(GFCF)_{it-1} + \tau_4(SSE)_{it-1} + \tau_5(ED)_{it-1} + \tau_6(ED^2)_{it-1} + \tau_7(MD)_{it-1} + \tau_8(INF)_{it-1} + \tau_9(TAX)_{it-1} + \tau_{10}(TRADE)_{it-1} + \mu_{it} \quad \textbf{(9)}$$

6. Results and Discussions

6.1 Descriptive Statistics and Correlation Analysis

Descriptive statistics are depicted in Table 1 for the variables utilized in the analysis for a sample period from 1990 to 2019. The central value of the variables is measured by two different methods mean and median. The table shows that GDPG is the only variable whose mean and median values are almost the same during the sample period. For the rest of the variables mean values are slightly greater than the respective median values. It means that the average value of observations without arranging (mean) is different from the central value got after arranging these observations (median). Moreover, the mean value of GDP of the series 5.49 is very close to the mean GDP value of Bangladesh and Sri Lanka. The average value of external debt is 41.82 which is almost the same as belongs of the Maldives, Nepal, and, Pakistan. The average value of debt servicing 0.90 is During the observed period, the maximum value of GDPG is 26.11 % which belongs to the Maldives in 2006. While its minimum value is – 13.13 % which also belongs to the Maldives in 2005. The maximum value of external debt is 117.48% which is in Bhutan in 2019 and its minimum value is 14.88 % which belongs to India in 2005. The maximum value of debt servicing is 3.75% belongs to Bhutan in 2012 and its minimum value of 0.15 % belongs to Bangladesh. In this series of `observations, the maximum value of debt servicing interacted with demand management policies is 22.73 while the minimum value is -0.12. Multilateral debt's maximum value is 87.85% which belongs to Nepal in 2004 and the minimum value is 10.07% which is in India in 2019. During the selected time maximum value of the inflation rate is 50.89 % in the Maldives in 2001 and its minimum value is -1.14 % which also belongs to the Maldives in1998. The maximum value of the tax is 19.81% belongs to Nepal in 2019 and the minimum value is 0.28% in the Maldives in 2015. The maximum value of secondary school enrolment is 100.34% in Sri Lanka in 2018 and its minimum value is 20.91% belongs to Bangladesh in 1990. The maximum value of trade is 168.08% in the Maldives in 1990 and the minimum value is 15.51% which belongs to India in 1990. The maximum value of the labor force participation rate of 86.17% is in the Maldives in 2000 and its minimum value is 46.29% which belongs to India in 2004. Gross fixed capital formation has a maximum value of 69.67% that is in Bhutan in 2000 and a minimum value of 12.52% belongs to Nepal in 2010. Deviation of individual value from the average value is measured through standard deviation. So, the standard deviation for selected variables is as follows: 3.21 for GDPG, 20.81 for foreign debt, 0.62 for debt servicing, 3.63 for debt servicing interacted with demand management policies, 21.79 for multilateral debt, 5.63 % for inflation, 3.63 for tax, 21.68 for secondary school enrollment, 43.36 for trade, 11.26 for the labor force and standard deviation of gross fixed capital is 12.12. Skewness is used to judge whether a series of observations for a particular variable is normally distributed, positively skewed, or negatively skewed. So, the coefficients of skewness show that a

series of observations for all the variables included in the study, during the observed time is positively skewed.

Table 1

Descriptive Statistics of Key Variables (1990-2019)

	GDPG	ED	DS	DS*P	MD	INF	TAX	SSE	TRADE	LFPR	GFCF
Mean	5.49	41.82	0.90	4.15	45.3	7.44	10.32	56.87	66.05	62.03	28.76
Median	5.47	38.14	0.73	2.88	40.3	6.63	9.52	51.52	48.28	57.52	26.25
Maximum	26.11	117.4	3.75	22.73	87.8	50.89	19.81	100.34	168.08	86.17	69.67
Minimum	-13.13	14.88	0.15	-0.12	10.0	-1.14	0.28	20.91	15.51	46.29	12.52
Std. Dev.	3.21	20.81	0.62	3.63	21.7	5.63	3.63	21.68	43.36	11.26	12.12
Skewness	0.25	1.35	1.44	1.81	0.40	3.45	0.23	0.41	1.15	0.96	1.45
Kurtosis	17.27	5.24	5.58	7.51	2.07	23.29	3.39	2.23	3.11	2.64	5.02
Jarque-Bera	1784.48	107.8	130.6	293.59	13.1	4018.16	3.23	11.18	46.42	24.71	80.55
Prob.	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00
Obs.	210	210	210	210	210	210	210	210	210	210	210

As kurtosis is the measure of peakedness, according to the table coefficients of kurtosis, all the series of variables are leptokurtic except MD, SSE, and, LFPR. The distribution of the series of these three variables is leptokurtic. Jarque-Bera is the measure of normal distribution. JB statistics along with concerning p-value will be considered at the same time to know whether the series of observations for an individual variable is normally distributed or not. If the p-value of the JB statistic for the series is less than 5% or 0.05, we will reject null hypothesis H0. It means normal distribution is being rejected and distribution is non-normal. Thus, H1 will be accepted. A p-value greater than 0.05 or 5% shows normal distribution so H0 will be accepted in this case and H1 will be rejected. The table shows the p-value of the series of observations in which all the variables are 0.00 except tax whose p-value is 0.20 which is greater than 5%. So, all the series of observations except tax are non-normal distributions. Only a series of taxes is normally distributed.

Correlation matrixes of key variables utilized in the study are shown in Table 2 The correlation coefficient provides two types of information. First, it explains the strength of the relation between two variables. Secondly, its sign tells whether said relation is negative or positive. According to the table, there exists a negative and weaker correlation between the annual growth rate of GDP and all other variables except secondary school enrolment rate, trade, labor force participation rate, and, gross fixed capital formation. The correlation between the annual growth rate of GDP and these variables is positive but weak. External debt is positively correlated with all variables except multilateral debt and inflation rate. The positive correlation is moderate with debt servicing; debt servicing interacted with demand management policies, labor force participation rate and, gross fixed capital formation and it is weaker with tax, secondary school enrolment rate and, trade. While the negative correlation is weak between external debt and multilateral debt and external debt and inflation rate.

Table 2

Correlation Matrix of Key Variables (1990-2019)

Correlation	GDPG	ED	DS1	DS*P	MD	INF	TAX	SSE	TRADE	LFPR	GFCF
GDPG	1										
ED	-0.03	1									
DS1	-0.06	0.61	1								
DS*P	-0.12	0.53	0.87	1							

Correlation	GDPG	ED	DS1	DS*P	MD	INF	TAX	SSE	TRADE	LFPR	GFCF
MD	-0.12	-0.23	-0.45	-0.36	1						
INF	-0.25	-0.05	0.08	0.42	0.07	1					
TAX	-0.02	0.17	0.19	0.41	-0.11	0.05	1				
SSE	0.09	0.21	0.16	0.21	-0.37	-0.05	0.39	1			
TRADE	0.13	0.29	0.22	0.14	-0.15	-0.09	0.03	0.26	1		
LFPR	0.23	0.31	0.17	0.36	0.67	0.44	0.17	0.20	0.44	1	
GFCF	0.15	0.33	0.18	0.42	0.32	0.29	0.26	0.31	0.34	0.66	1

Debt servicing is positively correlated with DS*P, INF, TAX, SSE, TRADE, LFPR, and, GFCF. Its only strong correlation is with DS*P and weaker with the other said variables. Debt servicing is negatively correlated with multilateral debt and the correlation is moderate. Debt servicing interacted with demand management policies are positively correlated with all variables except multilateral debt but the correlation is moderate with inflation rate, tax, labor force participation rate, and, gross fixed capital formation and weaker with secondary school enrolment and trade. It is negatively and moderately correlated with multilateral debt. Multilateral debt is positively correlated, with labor force participation rate and, gross fixed capital formation and the correlation is moderate but the correlation with inflation rate is also positive but weak. However multilateral debt is negatively correlated with tax and trade and the correlation is weak. Its correlation with secondary school enrolment is negative and moderate. The inflation rate is positively correlated with tax and gross fixed capital formation. This correlation is weak. Inflation is positively and moderately correlated with the labor force participation rate. Moreover, the inflation rate is negatively correlated with secondary school enrolment and trade. The correlation between these two variables is weak. Although tax is positively correlated with SSE, TRADE, LFPR, and, GFCF but its correlation with SSE is moderate while with the other two variables it has a weak correlation. There exists a positive and weak correlation between SSE and TRADE and SSE and LFPR. While the correlation between SSE and GFCF is positive and moderate. Trade is positively related to LFPR and GFCF. The correlation is moderate. The labor force participation rate is positively correlated with the gross fixed capital formation rate and the correlation is moderate.

6.2 Unit Root Analysis

Before starting the process of estimation of a regression model, researchers are in need to check the stationary or non-stationary properties of each variable. Unit root means non-stationary. If in a regression model there existed some non-stationary variables, the results will be not reliable. So, the study utilizes different tests for the panel data.

Table 3 explains the result of different unit root tests. According to the results, all variables except inflation and labor force participation rate are non-stationary 1 (1) at a 5% significance level. Inflation and labor force participation rate are the only variables that are integrated of order zero at the same significance level. No variable is integrated into order two.

Table 3

Panel Unit Root Tests

	Intercept				Intercept and Trend				None			
Variable	**LLC test**	**IPS Test**	**ADF - Fisher**	**PP-Fisher**	**LLC test**	**IPS Test**	**ADF - Fisher**	**PP-Fisher**	**LLC test**	**ADF - Fisher**	**PP-Fisher**	**Conclusion**
GDPG	-1.535 (0.203)	-1.949 (0.548)	6.640 (0.412)	7.681 (0.121)	-1.798 (0.259)	-1.756 (0.140)	8.607 (0.256)	27.975 (0.147)	-0.285 (0.387)	19.322 (0.153)	32.772 (0.003)	I(1)
LFPR	-6.21177 (0.000)	-4.40568 (0.000)	58.0276 (0.0000)	75.1905	-1.916 (0.027)	-0.22131 (0.4124)	26.273 (0.0239)	20.5092 (0.1149)	-0.70876 (0.0000)	58.0276 (0.0000)	75.1905 (0.0000)	1(0)
GFCF	-0.70876 (0.2392)	-1.39711 (0.0812)	24.7187 (0.0374)	50.7686 (0.0000)	0.2227 (0.587)	0.14919 (0.5592)	13.5617 (0.4829)	28.8299 (0.0110)	-1.72739 (0.0420)	14.5490 (0.4097)	31.8839 (0.0042)	1(1)
SSE	1.588 (0.943)	2.701 (0.996)	6.469 (0.952)	14.579 (0.407)	1.138 (0.872)	0.390 (0.652)	12.323 (0.580)	29.384 (0.009)	3.761 (0.999)	1.772 (1.000)	1.475 (1.000)	I(1)
ED	-1.172 (0.120)	-0.324 (0.372)	15.030 (0.376)	8.419 (0.866)	0.218 (0.586)	-0.267 (0.394)	15.701 (0.331)	8.770 (0.845)	-2.294 (0.010)	18.380 (0.190)	20.338 (0.119)	I(1)
DS	-1.909 (0.028)	-0.716 (0.236)	15.579 (0.339)	15.899 (0.319)	3.485 (0.999)	3.470 (0.999)	3.478 (0.997)	3.596 (0.997)	-3.881 (0.000)	30.111 (0.007)	37.758 (0.000)	I(1)
MD	1.305 (0.904)	2.105 (0.982)	3.543 (0.997)	3.076 (0.998)	-0.272 (0.392)	1.449 (0.926)	7.561 (0.910)	13.990 (0.450)	-1.476 (0.069)	18.865 (0.170)	13.521 (0.485)	I(1)
INF	-2.705 (0.003)	-3.394 (0.000)	36.650 (0.000)	75.187 (0.000)	-1.779 (0.036)	-2.117 (0.017)	25.211 (0.032)	64.224 (0.000)	-3.705 (0.000)	32.600 (0.003)	46.991 (0.000)	I(0)
TAX	2.620 (0.995)	3.378 (0.999)	4.215 (0.994)	5.936 (0.968)	1.467 (0.928)	1.583 (0.943)	8.358 (0.869)	9.656 (0.786)	1.351 (0.911)	10.943 (0.690)	15.637 (0.336)	I(1)
TRADE	-1.284 (0.099)	-1.520 (0.064)	22.821 (0.062)	29.853 (0.008)	-0.022 (0.491)	-0.743 (0.228)	22.411 (0.070)	34.528 (0.001)	-0.454 (0.324)	7.116 (0.930)	8.195 (0.878)	I(1)

6.3 Long Run Analysis

The long-run analysis of external debt and growth is done by developing three models. Our first model is the external debt and growth model. Then in the second model, external debt and growth are analyzed in the presence of demand management policies. In the third model nonlinear analysis is done by utilizing the external debt Laffer curve.

6.3.1 Long-run analysis of External Debt and Growth

The long-run results of external debt and growth nexus in the context of SAARC countries are presented in this section. In Table 4, GDPG is the dependent variable, and labor force participation rate, gross fixed capital formation, external debt, debt servicing, inflation, tax, secondary school enrolment, and, trade are independent variables. Thus, in the model, we used debt as a stock variable (external debt stock) as well as a flow variable (debt servicing) to observe the impact each one has on GDPG. The labor force participation rate has a positive sign and its coefficient is statistically significant. Labor is an essential part of all growth models. It is the most ancient factor of production. An economy that has a high labor force participation rate, can accelerate its growth rate. The positive relation between LFPR and GDP growth rate is supported by Awan and Qasim (2020).

Table 4

External Debt and Growth Model

Dependent Variable: D(GDPG)				
Selected Model: ARDL(1,1,1,1,1,1,1)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
C	0.018169	0.013575	1.338401	0.1825
LFPR	0.0618	0.0133	4.6333	0.0000
GFCF	0.0475	0.0244	1.9472	0.0534
SSE	0.0669	0.0268	2.4939	0.0138
ED	-0.0688	0.0274	-2.5056	0.0134
DS	-3.3588	0.6912	-4.8597	0.0000
INF	-0.1209	0.0310	-3.8993	0.0001
TAX	-0.5432	0.1176	-4.6187	0.0000
TRADE	0.0440	0.0179	2.4631	0.0150

The coefficient of gross fixed capital formation is positive and statistically significant. So, according to the results, a high-level capital formation will tend to accelerate GDPG in SAARC countries. Growth theories considered capital formation as a necessary condition for growth. The positive impact of capital formation on GDPG is also supported by Zaman and Arsalan (2014), Ali and Mustafa (2012), and, Siddique et al. (2016).

However, the coefficient of secondary school enrolment that is used as a proxy of human capital is statistically significant and positive. It is suggested by economic theories that human capital played a vital role in the process of growth. That's why it is included in all growth models as a factor of production as well as its accumulation is considered a component of economic growth. Human capital can contribute to an economy`s growth through several channels. First of all human capital can design sound policies and foolproof planning. It can make possible effective utilization of all available resources by allocating them for the most efficient use. Furthermore, the production of all sectors depends on skilled entrepreneurs as well as on hardworking laborers. This particularly

explains the reasons behind the positive impact of human capital on growth. Presbitero (2008) and Ali and Mustafa (2012) also concluded the same findings.

The coefficient of external debt is negative and statistically significant. The findings show that SAARC economies are utilizing foreign debt to cover their budget deficit rather than investing them in some development projects. So, the debt being spent for consumption purposes fail to produce any positive effect on the GDPG of the observed economies. According to the debt overhang theory when a country`s volume of debt is greater than its potential for repayment, the process of growth suffers and investment level is discouraged. This is because the economy must devote a large portion of its output to pay back loans as well as their servicing. Keynesian theory of economic growth is also supported by the findings of the study. Keynes was of the view that savings and investment determine the process of growth in an economy. A high level of external debt, due to its high payments of servicing obligations will cause the circular flow of national income to depress. Thus, investment will decrease and since the multiplier`s negative impact is as strong as its positive impact, the decrease in national income will be manyfold. Hence the process of growth will be negatively affected. The negative relation between foreign debt and GDPD is the same as found by Babu et al. (2014), Ada et al. (2016), Siddique et al. (2017), Matandre and Tito (2018), Awan and Qasim (2020). The inverse relation between growth and overseas loans is also consistent with the findings of Hameed and Quddus (2020) for SAARC countries.

The coefficient of debt servicing is also negative and statistically significant. This negative impact is proof of the crowding-out effect. When an economy accumulates too many foreign loans and to meet its high servicing obligations, it must increase tax rates. Thus, due to the high level of taxes, marginal efficiency of capital declines, and in turn investment decreases. Thus, GDPG is harmed. Another reason for the negative impact of debt servicing on growth is that when a major part of the SAARC economy's scarce resources is paid to donor agencies, there is hardly a little portion of these scarce resources left to spend on social overhead capital or direct productive activities. These expenses are necessary but, in a case, when these are short, GDPG is inversely influenced. Unstable demand management policies can be a reason for this negative relationship between foreign debt and economic growth. Demand management policies play a vital role in optimum allocation of resources and cause GDP and level of investment to increase. But in absence of foolproof demand management policies GDP as well as investment level falls. The negative impact of debt servicing obligation and debt on gross domestic product per capita growth rate was found adverse by Sheikh et al. (2010). But there also exist some controversies in results such as Mahmoud (2015) found that GDP was an increasing function of external loans and a decreasing function of debt servicing.

Inflation has an adverse and statistically significant impact on the dependent variable. It is through several channels that inflation harms growth. First, a rise in the general price level causes living expenses to increase and there is hardly something to save as the power to save declines. Thus, low private savings leads to low investment which harms growth. Furthermore, a high inflation rate produces unrest in the economy by destroying people`s peace of mind. Their marginal productivity declines and even they can indulge in strikes to get a rise in wages. These situations cause the overall production to decline and growth is harmed. Due to high inflation government consumption expenses also tend to rise as it must pay compensation for inflation to employees as well as pensioners. Due to inflation, it must spend more than the estimated on the development projects under the procedure. In this way, the budget deficit increases, and growth is harmed. Another cause for the negative impact of inflation on growth is cost-push inflation. It decreases profit and thus output and investment shrink. Finally, an economy`s balance of payments becomes more unfavorable. It is due to inflation that an economy`s exports become more expensive and their demand decline, whereas its imports become cheaper and demand for imports increases. Thus, the external gap is widened and growth suffers. SAARC economies are all developing economies. Inflation is one of the causes of their low growth rate. This negative impact of inflation is in line with

the result found by Soydan and Bedir (2015) in the context of developing economies. However, were (2001) found that the past inflation rate accelerates the process of growth while the current inflation rate deteriorates growth.

The coefficient of tax is also negative and statistically significant. Tax reduces disposable personal income. As a result, consumption savings and investment levels will reduce. A low level of consumption will harm growth through the acceleration principle. While a low level of savings will lead to lower investment. It will result in a low level of capital accumulation and growth will suffer. Moreover, due to high tax rates investment declines, and multiplier negative effect GDP declines manyfold. Due to the high tax rate, private investment will be crowded out. Saqib et al. (2014) also found the adverse impact of different types of taxes on consumption, savings, investment, and GDP in the context of Pakistan.

The coefficient of trade is also statistically significant and with a positive sign. Trade can enhance growth in several ways. Trade enables an economy to earn foreign exchange via exporting its specialized or excess production of goods and services. It also provides developing economies with the opportunity of importing the latest technologies from developed countries. Imported inputs can also be availed due to international trade. Scarcity of anything can be overcome through trade that makes the prices stable in importing countries. Furthermore, a positive X-M defiantly causes the growth to maximize. Our result is consistent with Uzun et al. (2012) and Siddique et al. (2016).

6.3.2 Long-run Analysis of Demand Management Policies, External Debt, and Growth

Table 5 explains demand management policies, external debt, and the growth model. According to the results, the coefficients of labor force participation rate, and gross fixed capital formation rate are positive same as these were in the previous model. GDPG is again positively and significantly influenced by secondary school enrolment when demand management policies are considered in the debt and growth model. It indicates that sound policies utilize human capital in a better way. So, its impact is favorable on GDPG. Presbitero (2008) also found the same results.

Despite considering demand management policies in the debt and growth model the coefficient of external debt is again negative explaining its adverse impact on GDPG. The presence of debt overhang theory is approved by the result. This impact is statistically significant at the 5% level. Debt servicing interacted with demand management policies has a positive and significant influence on the dependent variable. The coefficient of debt services followed a negative sign when not interacting with these policies. It means that foolproof policies can convert the negative impact of debt servicing into a positive one. It is by designing policies with a small budget deficit and low inflation rate. Thus, debt as a flow variable will remain no more problematic rather it speeds up the process of growth.

How the negative impact of debt servicing turned into a positive when interacting with demand management policies, two justifications can be given. Investors from all over the world are more willing to invest in economies having foolproof demand management policies. Thus, more and more investors are attracted by such economies. On the contrary, macroeconomic instability caused by a high budget deficit, limited trade, and a high rate of inflation will reduce investment levels. The budget deficit is usually caused when the government devotes a major share of its revenues to non-development activities instead of investing them in development projects. So, it seeks foreign debt to meet its consumption needs and the external debt utilized for the said purpose fails to produce any positive impact on GDPG. Our result is in line with Behrouz et al. (2017) and Dey and Tareque (2020).

Table 5

Demand Management Policies, External Debt and Growth Model

Dependent Variable: D(GDPG)				
Selected Model: ARDL (1,1,1,1,1)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
C	0.633884	0.454247	1.395461	0.1647
LFPR	0.0597	0.0248	2.4051	0.0175
GFCF	0.0478	0.0832	0.5750	0.5662
SSE	0.0268	0.0130	2.0706	0.0396
ED	-0.0851	0.0269	-3.1651	0.0019
DS*P	0.2871	0.0807	3.5569	0.0005
MD	0.0847	0.0247	3.4265	0.0008

Multilateral debt explains the composition of total external debt. The coefficient of multilateral debt is also a positive sign which is meant for its positive impact on GDPG. This impact is significant too. It shows that GDPG can be enhanced by maximizing the percentage share of multilateral debt in total external debt. The justification for this favorable impact is that most servicing cost is low on this type of debt and multilateral debt is poverty or policy-driven. Our results are supported by Ramzan and Ahmad (2014) and Behrouz et al. (2017).

6.3.3 Long-run Analysis of External Debt Laffer Curve

Table 6 shows a nonlinear analysis of the external debt Laffer curve. It is shown that the coefficient of labor force participation rate is statistically significant and positive. Gross fixed capital formation has also a significant positive coefficient. The coefficient of external debt is positive while the external debt scare carries a negative sign. The Laffer curve theory explains the nonlinear relation between external debt and growth and the curve is inverted u-shaped. It's the first part that the rising part is considered good because, in this part, growth is an increasing function of foreign debt. The peak of this curve shows the threshold level of foreign debt a level that is sustainable for an economy. This level is unique for every economy. Then there is the declining phase (bad side) of the Laffer curve. External debt extended to this phase reverses the growth.

Coefficients of multilateral debt, secondary school enrolment, and trade are statistically significant and positive. Whereas coefficients of inflation and tax are significant but negative. This result is the same as in our previous two models.

Table 6

External Debt Laffer Curve: Non-Linear Analysis

Dependent Variable: D(GDPG)				
Selected Model: ARDL (3,2,2,2,2,2,2,2)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
C	0.015449	0.014908	1.036285	0.3015
LFPR	0.0515	0.0165	3.1175	0.0022
GFCF	0.1816	0.0834	2.1763	0.0312
Dependent Variable: D(GDPG)				

Selected Model: ARDL (3,2,2,2,2,2,2,2)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
SSE	0.3780	0.0809	4.6738	0.0000
ED	0.5762	0.1924	2.9958	0.0037
ED²	-0.0056	0.0018	-3.1806	0.0021
MD	0.3708	0.0768	4.8272	0.0000
INF	-0.2905	0.0555	-5.2380	0.0000
TAX	-0.9260	0.1774	-5.2199	0.0000
TRADE	0.3746	0.0630	5.9493	0.0000

6.4 Error Correction Analysis

In the short-run Table 7 dependent variable is GDPG. The coefficient of error correction term is negative. Negativity is the necessary condition for the coefficient of the cointegration equation. So, the necessary condition is fulfilled. The sufficient condition is that it must be significant. The decision of significance is made based on the p-value. If the p-value is less than 0.05 then it is significant at 5%. Significance can be judged at 1% which is a very strict criterion and 10% which is a loose criterion. 5% criteria, being moderate criteria is adopted. As the last column of the first-row shows, the p-value is 0.00 means less than 0.05. Thus, the sufficient condition is also satisfied. Furthermore, the value of the coefficient supplies additional information about the speed of adjustment from the short run to long run. It tells how much time the model will adjust in case of a sudden shock. The data is collected on an annual basis. The value of the coefficient is 1.0223 which means the model will take more than one year to correct.

Table 7

External Debt and Growth Model

Dependent Variable: D(GDPG)				
Selected Model: ARDL (1,1,1,1,1,1,1)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
COINTEQ01	-1.0223	0.1069	-9.5617	0.0000
D(LFPR)	0.3002	0.5265	0.5703	0.5693
D(GFCF)	0.0662	0.0163	4.0719	0.0001
D(SSE)	0.0115	0.0399	0.2870	0.7745
D(ED)	-0.1342	0.0666	-2.0162	0.0457
D(DS1)	2.6412	2.0910	1.2631	0.2086
D(INF)	-0.0052	0.0522	-0.1003	0.9203
D(TAX)	-0.1848	0.1732	-1.0669	0.2879
D(TRADE)	0.0498	0.0635	0.7846	0.4340
C	8.3197	1.9062	4.3645	0.0000

Table 7 represents the short-run model of demand management policies, external debt, and growth. The table shows that the coefficient of the cointegration equation is negative and significant as the p-

value is 0.00 means both conditions are met. The value of the coefficient is 1.0495 which means the short-run model will take more than one year for adjustment in case of any discrepancy. So, it's time for adjustment to be more than the last model of a short run.

Table 8

Demand Management Policies, External Debt and Growth Model

Dependent Variable: D(GDPG)				
Selected Model: ARDL (1,1,1,1,1)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
COINTEQ01	-1.0495	0.1015	-10.3384	0.0000
D(LFPR)	0.0091	0.0145	0.6295	0.5299
D(GFCF)	0.1651	0.0451	3.6605	0.0003
D(SSE)	-0.0137	0.0483	-0.2831	0.7775
D(ED)	-0.0619	0.1051	-0.5891	0.5567
D(DS1*P)	0.1356	0.0770	1.7612	0.0802
D(MD)	-0.0156	0.1058	-0.1473	0.8831
C	16.6183	2.0114	8.2620	0.0000

Table 9 shows a nonlinear analysis of the external debt and Laffer curve for the period 1990 to 2019. In this short-run model too, the cointegration equation satisfied necessary and sufficient conditions. Its coefficient is negative and it is significant also as the p-value is 0.0081 which is less than 0.05. As the period of adjustment is concerned, the value of the coefficient is 0.6729. The approximate time this model will take for correcting any error that occurred in the short run is half a year. Thus, the model takes less time for adjustment as compared to the other two models.

Table 9

External Debt Laffer Curve: Non-Linear Analysis

Dependent Variable: D(GDPG)				
Selected Model: ARDL (1,1,1,1,1)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
COINTEQ01	-0.6729	0.2476	-2.7174	0.0081
D(GDPG (-1))	0.1158	0.0738	1.5685	0.1187
D(GDPG(-2))	0.1333	0.0766	1.7399	0.0837
D(LFPR)	-0.2878	0.1614	-1.7833	0.0785
D(GFCF)	-0.2184	0.1264	-1.7279	0.0880
D(SSE)	-0.1260	0.0805	-1.5658	0.1215
D(SSE(-1))	-0.0417	0.0891	-0.4680	0.6411
D(ED)	-0.5122	0.3301	-1.5517	0.1248
Dependent Variable: D(GDPG)				

Selected Model: ARDL (1,1,1,1,1)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
D(ED(-1))	0.0175	0.3855	0.0455	0.9639
D(ED^2)	0.0035	0.0035	1.0136	0.3140
D(ED(-1)^2)	-0.0010	0.0042	-0.2445	0.8075
D(MD)	-0.3736	0.0761	-4.9084	0.0000
D(MD(-1))	-0.3042	0.2869	-1.0606	0.2922
D(INF)	0.0612	0.0933	0.6560	0.5138
D(TAX)	-0.3330	0.3614	-0.9213	0.3598
D(TAX(-1))	-0.1535	0.4817	-0.3187	0.7508
D(TRADE)	0.1919	0.0942	2.0376	0.0450
D(TRADE(-1))	0.0887	0.0443	2.0019	0.0488
C	-15.6137	6.7861	-2.3008	0.0241

7. Conclusions and Policy Recommendations

This paper has explored the impact of external debt interacting with demand management policies on the economic growth of SAARC countries namely Pakistan, India, Bangladesh, Bhutan, Srilanka, Maldives, and Nepal. Many studies focused on the debt and growth nexus but only a few studies considered this nexus along with demand management policies. Even these few studies used time-series data. In our study, we include debt not only as a stock variable but also as a flow variable and include multilateral debt to explore their impact on the growth rate. The non-linear relationship between debt and growth is explained by utilizing the debt Laffer Curve.

The principal objectives of the study include investigating the relationship between external debt and economic growth. To explore the role of demand management policies along with external debt on economic growth and to probe the non-linearity of external debt in the form of debt Laffer curve in the context of SAARC countries. The sample period is 1990 to 2019 and secondary data is collected on an annual basis. The ARDL cointegration technique is applied. GDPG is the explained variable whereas gross fixed capital formation, secondary school enrolment, external debt, debt servicing, multilateral debt, human capital, inflation, TAX, and trade are explanatory variables.

The finding of the study is that external debt both as a stock variable and as a flow variable harmed the growth rate in SAARC countries not only when debt and growth nexus are studied alone but even when demand management policies have interacted with the nexus of the external debt retarded growth but debt servicing is enhancing the growth rate. In the latter case, multilateral debt is also encouraging growth. Demand management policies that are a combination of monetary policy and fiscal policy are included to analyze how effective these policies are in the utilization of foreign debt for growth purposes. Variable of trade capture trade policy impact, inflation proxies monetary policy and TAX is a fiscal policy instrument. However, in nonlinear analysis, both the external debt and multilateral debt are accelerating the growth rate but the external debt scare is again harming growth.

A threshold level of foreign debt is also found in the study. The stock of foreign debt until this level is attained enhances growth but beyond that optimal level, the phenomena are reversed. The negative coefficient of the external debt scare is proof that SAARC countries have accumulated foreign debt beyond the threshold level.

Outcomes of the study derived from data analyses enable us to make some policy recommendations. External debt as a stock variable and even as a flow variable remained a hurdle in achieving growth. Therefore, SAARC economies may avoid accumulating foreign debt greater than the threshold level. The governments of these countries may explore and utilize internal resources instead. Trade is encouraging growth, so the authorities may expand this sector by enhancing the volume of exports as well as importing more inputs for the home industry. Even then if the external debt is inevitable, multilateral debt may be preferred as GDPG is an increasing function of multilateral debt. More resources may be devoted to educating and training human resources as well as accelerating gross fixed capital formation. Most of all foolproof demand management policies may be designed to play their role in foreign debt and growth nexus by lowering the rate of inflation and reducing tax rates. Thus, the demand management policies can illuminate the adverse impacts of external debt and even reverse the phenomena.

References

Ada, M. S., Agu, O., & Umunna, G. (2016). Impact of external debt on economic growth in Nigeria: An ARDL bounds testing approach. *Journal of Economics and Sustainable Development ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)*, *7*, 16-26.

Adamu, I. M., & Rasiah, R. (2016). External debt and growth dynamics in Nigeria. *African Development Review*, *28*(3), 291-303.

Adegbite, E. O., Ayadi, F. S., & Ayadi, O. F. (2008). The impact of Nigeria's external debt on economic development. *International Journal of Emerging Markets*, *3*(3), 285.

Akduğan, U., & YILDIZ, N. (2020). The relationship between external debt and economic growth: the case of fragile five countries. *Gümüşhane Üniversitesi Sosyal Bilimler Enstitüsü Elektronik Dergisi*, *11*(2), 448-460.

Akram, N. (2017). Role of public debt in the economic growth of Sri Lanka: An ARDL Approach. *Pakistan Journal of Applied Economics*, *27*(2), 189-212.

Ali, R., & Mustafa, U. (2012). External debt accumulation and its impact on economic growth in Pakistan. *The Pakistan Development Review*, *54*(4) 79-95.

Awan, A. G., & Qasim, H. (2020). The impact of external debt on Economic Growth of Pakistan. *Global Journal of Management, Social Sciences and Humanities*, *6*(1), 30-61.

Ayadi, F. S., & Ayadi, F. O. (2008). The impact of external debt on economic growth: A comparative study of Nigeria and South Africa. *Journal of Sustainable Development in Africa*, *10*(3), 234-264.

Babu, J. O., Kiprop, S., Kalio, A. M., & Gisore, M. (2014). External debt and economic growth in the East Africa community. *African journal of business management*, *8*(21), 1011-1018.

Burhanudin, M. D. A., Muda, R., Nathan, S. B. S., & Arshad, R. (2017). Real effects of government debt on sustainable economic growth in Malaysia. *Journal of International Studies*, *10*(3), 161-172.

Çiftçioğlu, S., & Sokhanvar, A. (2018). External debt-economic growth nexus in selected CEE countries. *Romanian Journal of Economic Forecasting*, *21*(4), 85-100.

Dey, S. R., & Tareque, M. (2020). External debt and growth: role of stable macroeconomic policies. *Journal of Economics, Finance and Administrative Science*, *25*(50), 185-204.

Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. *Econometrica: Journal of the Econometric Society*, *55*(2), 251-276.

Elbadawi, I. A., Ndulu, B. J., & Ndung'u, N. (1997). 5 Debt Overhang and Economic Growth in Sub-Saharan Africa. In *External finance for low-income countries*. International Monetary Fund.

Fallahi, F., Asgharpour, H., & Ahmadian Behrouz, K. (2017). External debt and economic growth nexus in Iran: Role of macroeconomic policies. *Journal of Applied Economics Studies in Iran*, *6*(21), 99-122.

Gövdeli̇, T. (2019). External Debt and Economic Growth in Turkey: An Empirical Analysis. *Sosyoekonomi*, *27*(40), 119-130.

Hansen, H. (2004). The impact of external aid and external debt on growth and investment. In *Debt relief for poor countries* (pp. 134-157). Palgrave Macmillan, London.

Hameed, M. R., & Quddus, M. A. (2020). Impact of High and Growing Public Debt on Economic Growth in SAARC Countries: An Econometric Analysis. *Journal of Political Studies*, *27*(1), 125-142.

Hsing, Y. (2003). Impact of external debt and other macroeconomic policies on output in Brazil: a VAR approach. *Revista de Analisis Economico*, *18*(2), 97-108.

Johansen, S. & Juselius, K. (1990) "Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money", Oxford Bulletin of Economics and Statistics, *52*(2), 169–210.

Mahmoud, L. O. M. (2015). The role of external debt on economic growth: Evidence from Mauritania. *International Journal of Economics & Management Sciences*, *4*(4), 240.

Malik, S., Hayat, M. K., & Hayat, M. U. (2010). External debt and economic growth: Empirical evidence from Pakistan. *International Research Journal of Finance and Economics*, *44*(44), 1450-2887.

Matandare, M. A., & Tito, J. (2018). Public Debt and Economic Growth Nexus in Zimbabwe. *Journal of Economics and Sustainable Development*, *9*(2), 2222-2855.

Narayan, P. K., & Narayan, S. (2006). Savings behavior in Fiji: an empirical assessment using the ARDL approach to cointegration, *International Journal of Social Economics*, *33*(7), 468-480.

Ndubuisi, P. (2017). Analysis of the impact of external debt on economic growth in an Emerging Economy: Evidence from Nigeria. *African Research Review*, *11*(4), 156-173.

Pattillo, C. A., Poirson, H., & Ricci, L. A. (2002). External debt and growth. *Available at SSRN 879569*.

Pesaran, M. Hashem., Y. Shin and R. J. Smith (1999). Bounds Testing Approaches to the Analysis of Long-run Relationships", Cambridge Working Papers in Economics, 9907.

Pesaran, M. Hashem., Y. Shin and R. J. Smith (2001) "Bound Testing Approach to the Analysis of Level Relationships", Journal of Applied Econometrics, *16*(6), 289-326.

Presbitero, A. F. (2008). The debt-growth nexus in poor countries: A reassessment. *Economics: The Open-Access, Open-Assessment E-Journal*, *2*(30), 1-28.

Ramzan, M., & Ahmad, E. (2014). External debt growth nexus: Role of macroeconomic policies. *Economic Modelling*, *38*, 204-210.

Saqib, S., Ali, T., Riaz, M. F., Anwar, S., & Aslam, A. (2014). Taxation effects on economic activity in Pakistan. *Journal of Finance and Economics*, *2*(6), 215-219.

Sheikh, M. R., Faridi, M. Z., & Tariq, K. (2010). Domestic Debt and Economic Growth in Pakistan: An Empirical Analysis. *Pakistan Journal of Social Sciences (PJSS)*, *30*(2), 373-387.

Sheikh, M. R., Abbasi, M. N., Iqbal, S., & Masood, S. (2014). External Debt Sustainability Analysis: A Case of SAARC Countries. *International Journal of Management Research and Emerging Sciences*, *4*(1), 27-46.

Siddique, A., Selvanathan, E. A., & Selvanathan, S. (2016). The impact of external debt on growth: Evidence from highly indebted poor countries. *Journal of Policy Modeling*, *38*(5), 874-894.

Siddique, H. M. A., Ullah, K., & Haq, I. U. (2017). External debt and economic growth nexus in Pakistan. *International Journal of Economics and Empirical Research*, *5*(2), 73-77.

Soydan, A., & Bedir, S. (2015). External debt and economic growth: New evidence for an old debate. *Journal of Business Economics and Finance*, *4*(3), 500-522.

Uzun, A., Karakoy, C., Kabadayi, B., & Emsen, O. S. (2012). The impacts of external debt on economic growth in transition economies. *Chinese Business Review*, *11*(5), 491-499.

Were, M. (2001). *The impact of external debt on economic growth in Kenya: An empirical assessment* (No. 2001/116). WIDER discussion paper.

Zaman, R., & Arslan, M. (2014). The role of external debt on economic growth: Evidence from Pakistan economy. *Journal of Economics and Sustainable, 5*(24), 140-147.

Zouhaier, H., & Fatma, M. (2014). Debt and economic growth. *International Journal of Economics and Financial Issues*, *4*(2), 440-448.